

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. – 57. (Cancelled)

58. (Currently Amended) A system comprising:

one or more computers; and

a computer-readable medium coupled to the one or more computers having instructions stored thereon which, when executed by the one or more computers, cause the one or more computers to perform operations comprising:

providing a multi-modal user interface on a mobile device, the multi-modal interface for performing inventory management tasks in a warehouse environment, and the multi-modal interface enabling output and user input of information using both first and second modalities that collectively include a voice-based modality and a touch-based modality;

receiving a first user input identifying a job type mode, the first user input being input using either the first modality or the second modality as chosen by a user of the mobile device, and the job type mode being selected from among a stocking mode in which the user enters one or more items into a bin in the warehouse environment, a picking mode in which the user removes the one or more items from the bin in the warehouse environment, and a counting mode in which the user counts the one or more items in the bin in the warehouse environment,

transmitting information identifying the user-selected job type mode to an inventory management system ~~a server~~, in a format consistent with the modality in which the first user input was received,

responsive to transmitting the information, receiving a response to the information identifying the user-selected job type mode from the inventory management system server, in formats consistent with both the first modality and the second modality, the response identifying a location at which the user will perform a function related to the user-selected job type mode on

the one or more items, a description of the one or more items, and a best route from a present location of the user to the bin an item,

providing the response to the user via the using both audio and display components of the multi-modal user interface, in the formats consistent with both the first modality and the second modality,

receiving a second user input using either the first modality or the second modality as chosen by the user, the second user input indicating a completion of that the user has completed the selected function, and including count information or location information associated with the one or more items as observed by the user and, when the voice-based modality is used, a phonetically distinct checkword associated with the bin to indicate completion of the selected function item,

updating inventory data for the one or more items item based on the count information or the location information, the updated inventory data being accessible using the formats consistent with both the first modality and the second modality, and

transmitting information indicating the completion of that the user has completed the selected function related to the user-selected job type mode to the inventory management system, in a format consistent with the modality in which the second user input was received.

59. (Currently Amended) The system of claim 58, wherein the operations further comprise: outputting the updated inventory data in a format consistent with either the first modality or the second modality, such that the inventory data is maintained during performance of the inventory management tasks.

60. (Previously Presented) The system of claim 58, wherein the job type mode comprises job data.

61. (Currently Amended) The system of claim 58, wherein the multi-modal interface further enables output and user input information using first modality and the second modality collectively include two or more of a voice modality, a Radio Frequency Identification Device (RFID) modality, or a bar code modality, a touch modality, and a visual modality.

62. (Currently Amended) The system of claim 58, wherein the operations further comprise receiving a pick list identifying the ~~item~~ one or more items and the function.
63. (Previously Presented) The system of claim 62, wherein the operations further comprise: displaying the pick list using a visual user interface, and outputting, using voice synthesis, information identifying less than all items on the pick list.
64. (Previously Presented) The system of claim 58, wherein the formats consistent with both the first modality and the second modality comprise HTML and VXML, respectively.
65. – 67. (Cancelled)
68. (Currently Amended) The system of claim 58 further comprising:
determining, based on updating the inventory data, that ~~a bin~~ the bin associated with the item is expected to be empty;
prompting the user to confirm whether the bin is actually empty, using both the first modality and the second modality.
69. (Previously Presented) The system of claim 58, wherein the first user input is received using a different modality than the second user input.
70. (Currently Amended) The system of claim 69, wherein:
the first user input is received using ~~a voice~~ the voice-based modality, and
the second user input is received using ~~a tactile~~ the touch-based modality.
71. (Currently Amended) A computer-readable medium encoded with a computer program comprising instructions that, when executed, operate to cause a computer to perform operations comprising:

providing a multi-modal user interface on a mobile device, the multi-modal interface for performing inventory management tasks in a warehouse environment, and the multi-modal interface enabling output and user input of information using both first and second modalities that collectively include a voice-based modality and a touch-based modality;

receiving a first user input identifying a job type mode, the first user input being input using either the first modality or the second modality as chosen by a user of the mobile device, and the job type mode being selected from among a stocking mode in which the user enters one or more items into a bin in the warehouse environment, a picking mode in which the user removes the one or more items from the bin in the warehouse environment, and a counting mode in which the user counts the one or more items in the bin in the warehouse environment;

transmitting information identifying the user-selected job type mode to an inventory management system server, in a format consistent with the modality in which the first user input was received;

responsive to transmitting the information, receiving a response to the information identifying the user-selected job type mode from the inventory management system server, in formats consistent with both the first modality and the second modality, the response identifying a location at which the user will perform a function related to the user-selected job type mode on the one or more items, a description of the one or more items, and a best route from a present location of the user to the bin an item;

providing the response to the user via the using both audio and display components of the multi-modal user interface, in the formats consistent with both the first modality and the second modality;

receiving a second user input using either the first modality or the second modality as chosen by the user, the second user input indicating a completion of that the user has completed the selected function, and including count information or location information associated with the one or more items as observed by the user and, when the voice-based modality is used, a phonetically distinct checkword associated with the bin to indicate completion of the selected function item;

updating inventory data for the one or more items ~~item~~ based on the count information or the location information, the updated inventory data being accessible using the formats consistent with both the first modality and the second modality; and

transmitting information indicating ~~the completion of that the user has completed the~~ selected function related to the user-selected job type mode to the inventory management system, in a format consistent with the modality in which the second user input was received.

72. (Currently Amended) The computer-readable medium of claim 71, wherein the operations further comprise:

outputting the updated inventory data in a format consistent with either the first modality or the second modality, such that the inventory data is maintained during performance of the inventory management tasks.

73. (Previously Presented) The computer-readable medium of claim 71, wherein the job type mode comprises job data.

74. (Currently Amended) The computer-readable medium of claim 71, wherein the multi-modal interface further enables output and user input information using first modality and the second modality collectively include two or more of a voice modality, a Radio Frequency Identification Device (RFID) modality, or a bar code modality, a touch modality, and a visual modality.

75. (Currently Amended) The computer-readable medium of claim 71, wherein the operations further comprise receiving a pick list identifying the item one or more items and the function.

76. (Previously Presented) The computer-readable medium of claim 75, wherein the operations further comprise:

displaying the pick list using a visual user interface, and

outputting, using voice synthesis, information identifying less than all items on the pick list.

77. (Previously Presented) The computer-readable medium of claim 71, wherein the formats consistent with both the first modality and the second modality comprise HTML and VXML, respectively.

78. – 80. (Cancelled)

81. (Currently Amended) The computer-readable medium of claim 71 wherein the operations further comprise:

determining, based on updating the inventory data, that ~~a bin~~ the bin associated with the item is expected to be empty;

prompting the user to confirm whether the bin is actually empty, using both the first modality and the second modality.

82. (Previously Presented) The computer-readable medium of claim 71, wherein the first user input is received using a different modality than the second user input.

83. (Currently Amended) The computer-readable medium of claim 82, wherein: the first user input is received using ~~a voice~~ the voice-based modality, and the second user input is received using ~~a tactile~~ the touch-based modality.

84. (Currently Amended) A computer-implemented method comprising: providing a multi-modal user interface on a mobile device, the multi-modal interface for performing inventory management tasks in a warehouse environment, and the multi-modal interface enabling output and user input of information using both first and second modalities that collectively include a voice-based modality and a touch-based modality;

receiving a first user input identifying a job type mode, the first user input being input using either the first modality or the second modality as chosen by a user of the mobile device,

and the job type mode being selected from among a stocking mode in which the user enters one or more items into a bin in the warehouse environment, a picking mode in which the user removes the one or more items from the bin in the warehouse environment, and a counting mode in which the user counts the one or more items in the bin in the warehouse environment;

transmitting information identifying the user-selected job type mode to an inventory management system ~~a server~~, in a format consistent with the modality in which the first user input was received;

responsive to transmitting the information, receiving a response to the information identifying the user-selected job type mode from the inventory management system server, in formats consistent with both the first modality and the second modality, the response identifying a location at which the user will perform a function related to the user-selected job type mode on the one or more items, a description of the one or more items, and a best route from a present location of the user to the bin ~~an item~~;

providing the response to the user ~~via the~~ using both audio and display components of the multi-modal user interface, in the formats consistent with both the first modality and the second modality;

receiving a second user input using either the first modality or the second modality as chosen by the user, the second user input indicating ~~a completion of that the user has completed~~ the selected function, and including count information or location information associated with the one or more items as observed by the user and, when the voice-based modality is used, a phonetically distinct checkword associated with the bin to indicate completion of the selected function item;

updating inventory data for the one or more items item based on the count information or the location information, the updated inventory data being accessible using the formats consistent with both the first modality and the second modality; and

transmitting information indicating ~~the completion of that the user has completed the~~ selected function related to the user-selected job type mode to the inventory management system, in a format consistent with the modality in which the second user input was received.

85. (Currently Amended) The method of claim 84, further comprising:
outputting the updated inventory data in a format consistent with either the first modality or the second modality, such that the inventory data is maintained during performance of the inventory management tasks.
86. (Previously Presented) The method of claim 84, wherein the job type mode comprises job data.
87. (Currently Amended) The method of claim 84, wherein the multi-modal interface further enables output and user input information using first modality and the second modality collectively include two or more of a voice modality; a Radio Frequency Identification Device (RFID) modality, or a bar code modality, ~~a touch modality, and a visual modality.~~
88. (Currently Amended) The method of claim 84, further comprising receiving a pick list identifying the ~~item~~ one or more items and the function.
89. (Previously Presented) The method of claim 88, further comprising:
displaying the pick list using a visual user interface, and
outputting, using voice synthesis, information identifying less than all items on the pick list.
90. (Previously Presented) The method of claim 84, wherein the formats consistent with both the first modality and the second modality comprise HTML and VXML, respectively.
91. – 93. (Cancelled)
94. (Currently Amended) The method of claim 84 further comprising:
determining, based on updating the inventory data, that ~~a bin~~ the bin associated with the item is expected to be empty;

prompting the user to confirm whether the bin is actually empty, using both the first modality and the second modality.

95. (Previously Presented) The method of claim 84, wherein the first user input is received using a different modality than the second user input.

96. (Currently Amended) The method of claim 95, wherein:
the first user input is received using ~~a voice~~ the voice-based modality, and
the second user input is received using ~~a tactile~~ the touch-based modality.